

REMARKS

Upon careful and complete consideration of the Office Action, applicants have amended the claims and the specification which, when considered in conjunction with the comments herein below, are deemed to place the present application into condition for allowance. Favorable reconsideration of all the pending claims is earnestly solicited.

In the present Final Office Action, Claims 1-29 stand rejected under 35 U.S.C. §112, second paragraph as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More particularly, claims 1 and 29 were rejected with respect to the phrase “controlling effective parameters” and the word “substantial” as it relates to the residual moisture.

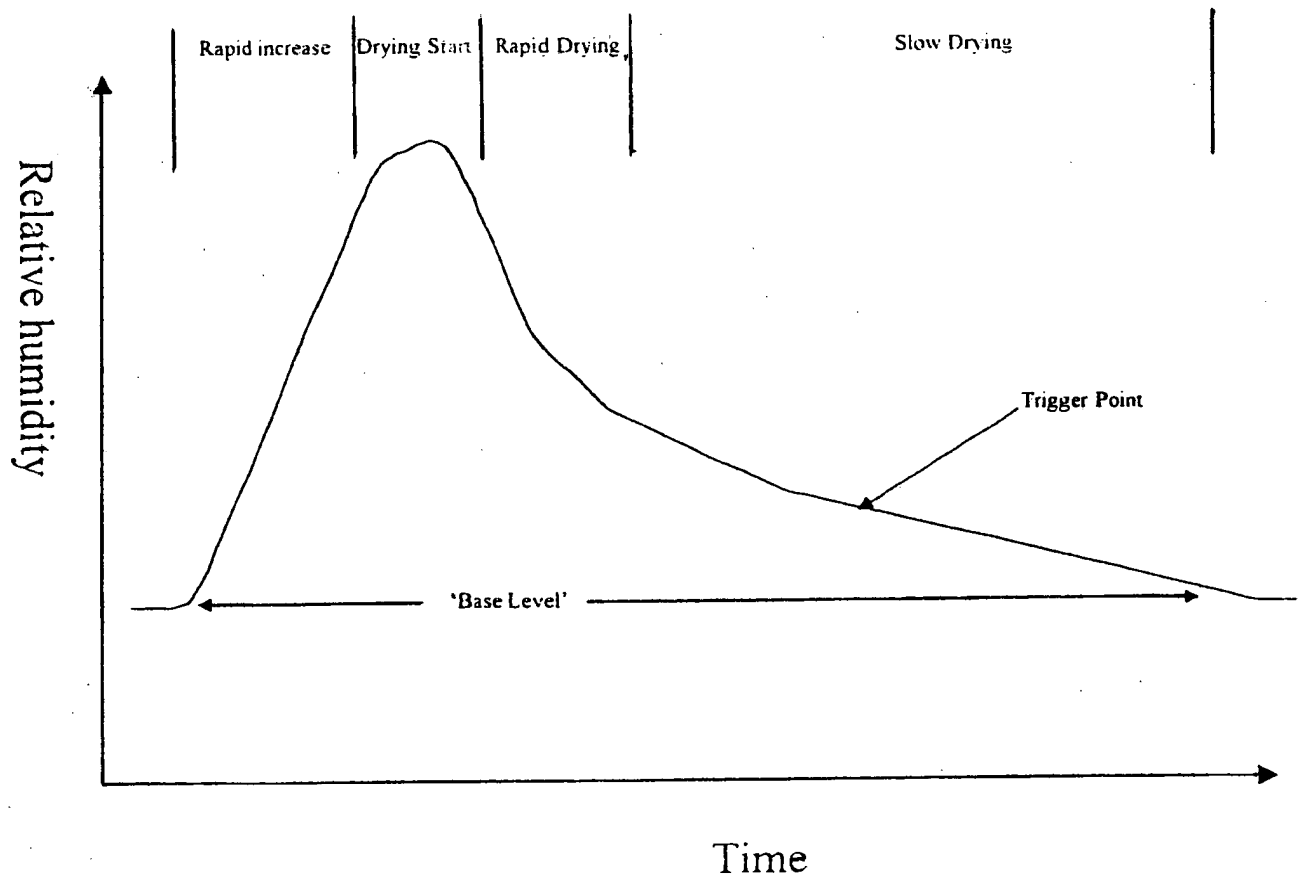
In response to the rejection concerning the indefiniteness of the “effective parameters”, applicants have amended Claims 1 and 29 by defining those precise parameters defined in original claim 2. That is, both claims 1 and 29 now refer to controlling effective parameters of said drying air selected from the group consisting of air humidity, air temperature, air flow speed, air flow time, air flow direction and any combination thereof.

As for the term “substantial” moisture, applicants have amended the claim to include the definition found in the subject specification. Specifically, as set forth on pages 3-4 of the subject specification, it is indicated that the drying should be stopped before the relative humidity has reached its basic level. The basic level is the level at which the gradient of the relative humidity has flattened to a plateau.

More particularly, the term “substantial” residual moisture means a moisture which is substantially higher than the moisture left in the coating layer in conventional panning procedures. By conventional standards, the drying would be complete when the drying air stops picking up moisture from the cores. Although it is not conventional in the art to do so, the applicants have found that the dry point can be monitored by monitoring the relative

humidity of the air exiting the apparatus. The applicants have found that at a certain point corresponding roughly to the point at which a conventional drying would be stopped, the relative humidity of the air exiting from the panning apparatus stops decreasing. In other words, the drying is traditionally complete when the relative humidity gradient has reached a plateau. This plateau indicates what in the application is referred to as the “basic level.”

The relative humidity of a drying cycle can be illustrated by the following curve:



The scales of the curve are purely arbitrary as it is not possible to place specific values to the points. The curve represents a steep increase in the relative humidity as the cores are coated with spraying syrup. When the spraying stops, the relative humidity levels off and drops rapidly at the start of the drying process. As the drying progresses, it becomes much slower and finally slowly reaches a plateau or base level which corresponds to the conventional point at which the next spraying sequence would be triggered. As is indicated by the arrow

in the curve, the trigger point of the present invention is significantly earlier than the conventional trigger point at the base level.

Thus, it is seen that in the present invention the drying is stopped well before the relative humidity of the outlet air reaches its basic level and its gradient flattens out to a plateau. When the relative humidity reaches the plateau, the cores are not necessarily 100% dry. The conventional methods may leave a minimal amount of moisture in the layer. However, compared to the conventional technique, a substantial residual moisture is intentionally left in the cores in accordance with the present invention.

It is respectfully submitted that it would be impossible to define the amount of residual moisture with any absolute figures since it is not possible to measure the moisture in the cores under the “skin”. The fact that there is substantial moisture left can, however, be seen in that the air is still effectively removing moisture from the cores and the humidity of the outlet air keeps decreasing.

It is noted that the art of panning is an art where still most of the control is made by empirical tests based on experience and by manually feeling the cores. An experienced panner will put in his hand among the cores and will feel their moisture condition. When they have the right dry feel, the panner then considers them ripe for the next spraying. It is further respectfully noted that an experienced panner would never intentionally leave excess moisture in the layer. Tests have shown that when the cores feel “right” in a conventional panning, the relative humidity of the air exiting from the apparatus has reached the above-mentioned “basic level”. It is not zero moisture level, but it is a minimal moisture level where substantially all the syrup has crystallized.

A conventional panning process would generally continue drying even after the relative humidity has reached its plateau, just to make sure that there is no under-drying. The present invention starts spraying new syrup well before the basic level has been reached.

In teaching panners to operate the present invention, the applicants have first dried the cores to the traditional dryness of the cores so that the conventional time has been found. This has been accomplished by either feel or by measuring the relative humidity of the outlet air. When the traditional drying time has been found, applicants have then shortened the drying time by triggering the spraying significantly earlier than in the traditional drying. In actual practice among those skilled in the art, there has been real surprise at the attempt of leaving moisture in the cores and disbelief of its operating properly. However, drying times have been reduced by 30% or more without any adverse effects on the products produced. Reducing the drying time as much as 30% has an enormous impact on the industrial process concerned.

The best results have been obtained at increased air temperature (of the inlet air) and increased relative humidity (measured in the outlet air) which have enabled significantly reduced air flow times and hence shorter drying cycles.

Applicants have very carefully considered the terms of the claims and have made efforts to find a better way of defining the present invention. However, no better way of defining has been found, this being partly because of the very empirical nature of the art of panning. Applicants also refer to the definitions and explanations in the subject specification and respectfully submit that they render the terms used in the claims unambiguous. That is, taking the whole nature of the art into consideration, it is respectfully submitted that the skilled artisan would not find the claims indefinite.

The Examiner has also alleged that the phrase "several times" found in claim 22 renders the claim indefinite. This language has been removed from the claim.

Consequently, in view of the amendments made to the claims, and the remarks given above, applicants respectfully request the Examiner to reconsider the wording of the claims as fulfilling the second paragraph of 35 U.S.C. §112. Accordingly, the rejection of these claims under 35 U.S.C. §112 is respectfully requested to be withdrawn.

The Examiner has also maintained the previous rejection of claims 1-4 under 35 U.S.C. §102(b) as allegedly anticipated by the article to Hartel entitled “Crystallization and Drying During Hard Panning” (hereinafter referred to as “Hartel”). Additionally, Claims 1-8, 15-17, 19-26 and 28-29 stand rejected under 35 U.S.C. §103 as allegedly unpatentable over U.S. Patent No. 6,365,203 to Degady, et al. (hereinafter referred to as “Degady et al.”) in view of Hartel. Claims 9-14, 17-18 and 27 stand rejected under 35 U.S.C. §103 as allegedly unpatentable over the combined disclosures of Degady, et al., Hartel, and U.S. Patent No. 5,376,389 to Reed, et al. (herinafter referred to as “Reed et al.”).

It is axiomatic that anticipation under §102 requires the prior art reference to disclose every element to which it is applied. In re King, 801 F.2d 1324, 1326, 231 USPQ 36, 138 (Fed Cir, 1986). Thus, there must be no differences between the subject matter of the claim and the disclosure of the prior art reference. Stated another way, the reference must contain within its four corners adequate direction to practice the invention as claimed. The corollary of the rule is equally applicable: absence from the applied reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Applicants respectfully submit that the claimed process of the present application is not anticipated by the disclosure of Hartel since the applied reference does not disclose a process in which the drying of the cores between sprayings is carried out by controlling the now specified effective parameters of the drying air *so as to cause a substantial residual moisture to remain in the drying coating layer at the start of a subsequent spraying phase.*

It is respectfully submitted that the Office Action has misinterpreted the disclosure of Hartel. It should be noted that Hartel states that “[I]f drying occurs too rapidly, the surface layer of the film can dry too quickly, causing formation of a skin of rubbery fluid...” (emphasis added). It is clear from the language used by Hartel that he does not control the drying so that a skin is created over the moist layer. On the contrary, this is something that

according to Hartel should be avoided by controlling that the drying is not too quick. Spraying on top of a skin with moisture underneath leads to mottling and a poor product. Based on Hartel, a person skilled in the art would not control his panning by spraying on top of a skin with moisture underneath.

In the present invention, the opposite is true. The applicants have surprisingly, and contrary to the prior art as evidenced by Hartel, found that the drying may be so quick so that a skin is formed and the drying may be stopped once the skin is formed even though removable moisture is retained underneath the skin.

Additionally, applicants further note that Hartel specifically states in his Summary that the results presented show that drying is not controlled by external conditions such as air velocity or relative humidity but rather by internal conditions. Hartel further states that drying takes place more rapidly than crystallization and that shorter cycle times lead to excess moisture being retained due to a layer of rubbery material on the surface, which in turn leads to mottling of the piece. Hartel does not suggest controlling the drying in this manner. To the contrary, Hartel is warning against such an uncontrolled procedure. Consequently, Hartel's suggestions are in accord with the prior art and clearly contrary to the teachings of the present invention.

The forgoing remarks clearly demonstrate that the applied reference does not teach each and every aspect of the claimed invention as required by King and Kloster Speedsteel; et al., therefore, the claims of the present application are not anticipated by the disclosure of Hartel. Applicants respectfully submit that the instant §102 rejection has been obviated and withdrawal thereof is respectfully requested.

With respect to the obviousness rejections, applicants again respectfully submit that the combined disclosures of Degady, et al. and Hartel and the combined disclosures of Degady, et al., Hartel and Reed, et al. do not render the claims obvious. Specifically, none of the applied references teaches or suggests a process for the production of chewable coated

cores in which the drying of the cores between sprayings is carried out by controlling the effective parameters of the drying air so as to cause a substantial residual moisture to remain in the drying coating layer at the start of a subsequent spraying phase.

Applicants respectfully point out that Degady et al. concerns a continuous process which is a totally different process from the batch type process of Hartel. It is noted that the present invention is also directed to a batch process. Degady et al. in fact begins his disclosure by describing a batch drying process as a distinct process from the continuous process of his invention. The Examiner's attention is respectfully directed to column 1, lines 18-47; column 2, line 44; and column 3, line 33 wherein Degady et al. describe the typical batch panning process as including three distinct processing steps, namely spraying, tumbling and drying. These batch processing steps described by Degady et al. correspond to the steps of the present invention as recited in claim 1: "... a syrup ... is intermittently sprayed over a rotating bed of cores and the cores are dried between sprayings with a flow of air."

In order to make it very clear that the intermittent spraying is part of the present invention, applicants have amended claim 1 so that the term "comprising" is at the beginning of the claim making the intermittent spraying and drying more clearly into a part of the actual process.

As indicated above, it is stressed that Degady et al. is not directed to a batch process. To the contrary, Degady et al. involves a continuous process, a process where both liquid spray and drying air flow are continuous. The person skilled in the art is well aware that batch processes and continuous processes are controlled in different manners and that while both process types have their undisputed benefits, they are not interchangeable.

Add to the above the fact that Hartel concerns a batch process. The first sentence of the Hartel disclosure states that "[t]he hard sugar shell is typically made by a repetitive process of spraying and drying." The continuous spraying used by Degady et al. and the

discontinuous spraying used by Hartel make the two processes, i.e. the two disclosures, incompatible and there is absolutely no way in which a person skilled in the art would find it obvious to combine these two teachings.

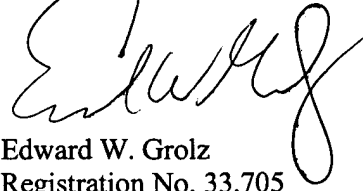
Degady et al. does not stop spraying and thus does not dry at all between sprayings. Hartel stops the spraying and dries between sprayings. Hartel also warns against not drying enough. It is not comprehended how it would be obvious to get from the teachings of Degady et al. combined with Hartel to get to the present invention, which dries until a skin is formed but stops drying while there is still removable moisture left in the layer. Leaving a substantial moisture in the layer under the skin in accordance with the present invention shortens the time required for the panning process and unexpectedly does not lead to the poor results which were expected from the teachings of the prior art.

Reed et al. also do not alleviate the above defect in Degady, et al. and Hartel since the applied reference fails to teach or suggest a process in which the drying of the cores between sprayings is carried out by controlling effective parameters of the drying air so as to cause a substantial residual moisture to remain in the drying coating layer at the start of a subsequent spraying phase. As already discussed above, Degady et al. and Hartel are not properly combined since the processes used therein exclude each other. Reed et al. teach a batch type coating with xylitol and another polyol to provide a dual coating but nothing in Reed et al. suggests deviating from the standard practice of drying the core. Accordingly, it must be assumed that Reed et al. dries in a manner wherein no skin is formed and so that there is no excess moisture left in the coating before the next spraying phase is started.

Based on the above amendments and remarks, it is respectfully submitted that the rejections to the claims under 35 U.S.C. §103 have been obviated; therefore reconsideration and withdrawal of the instant rejections raised in the Office Action are respectfully requested.

Thus, in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Edward W. Grolz', written over the typed name.

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